

IN THE CLAIMS

Please amend the claims as indicated below:

1 - 2. (CANCELLED)

3. (CURRENTLY AMENDED) A gearbox ~~as in claim 1 wherein~~ comprising:
a plurality of gears forming gearsets, each gearset including at least one shaft extending
from the gearset, wherein the gearsets are sized having ratios varying by degrees of
separation of a common ratio in a geometric sequence,

wherein the common ratio ~~for~~ is calculated by dividing a number of gearset combinations of forward speeds in the gearbox by a number of gearsets between two shafts, where the number of gearsets between two shafts is two or more,

and the degrees of separation of the common ratio for gearsets between a next pair of shafts is determined by dividing the common ratio from the prior pair of shafts by a number of gearsets between the next pair of shafts until all shaft pairs are calculated, and

further wherein the degrees of separation of the common ratio of gearsets in a last pair of shafts when calculated may have only 1 gearshaft between them.

4 - 21. (CANCELLED)

22. (CURRENTLY AMENDED) A gearbox ~~as in claim 14 wherein~~ comprising:
a plurality of gears forming gearsets, each gearset including at least one shaft extending
from the gearset, wherein the gearsets are sized having ratios varying by degrees of
separation of a common ratio in a geometric sequence, wherein

the gearbox includes no more than thirteen gearsets and the gearsets are
configured to form the gearbox as comprising 24 forward torques;

R is a common ratio in a geometric sequence, the gearbox further comprising:

a first frame member that includes a first gearset unit having gearsets sized to have a common ratio selected from the group consisting of R^{12} , $1/R^8$ and $1/R^6$;

a second frame member that includes a second gearset unit having gearsets sized to have a common ratio selected from the group consisting of $1/R^4$, $1/R^2$ and $1/R^3$;

a third frame member that includes a third gearset unit having gearsets sized to have a common ratio of $1/R$; and

a fourth frame member that includes a reverse pinion idle gear and a reverse gear coupled to a power source producing 24 reverse torques.

23. (CURRENTLY AMENDED) A gearbox ~~as in claim 14 wherein~~ comprising: a plurality of gears forming gearsets, each gearset including at least one shaft extending from the gearset, wherein the gearsets are sized having ratios varying by degrees of separation of a common ratio in a geometric sequence, wherein,

the gearbox includes no more than thirteen gearsets and the gearsets are configured to form the gearbox as comprising 24 forward torques;

wherein R is a common ratio in a geometric sequence, the gearbox further comprising:

a frame member comprising 3 units of gearsets including:

a first unit having gearsets sized to have a common ratio selected from the group consisting of $1/R^{12}$ and $1/R^4$;

a second unit having gearsets sized to have a common ratio selected from the group consisting of $1/R^6$ and $1/R^2$; and

a third unit having gearsets sized to have a common ratio of $1/R$, and a reverse pinion coupled to a power source to produce 12 reverse torques.

24. (CURRENTLY AMENDED) A gearbox ~~as in claim 14 wherein~~ comprising: a plurality of gears forming gearsets, each gearset including at least one shaft extending from the gearset, wherein the gearsets are sized having ratios varying by degrees of separation of a common ratio in a geometric sequence wherein R is a common ratio in a geometric sequence, the gearbox further comprising:

a frame that includes 4 units of gearsets forming 5 shafts including:

a first unit having gearsets sized to have a common ratio selected from the group consisting of R^0 , $1/R^8$ and $1/R^3$;

a second unit having gearsets sized to have a common ratio selected from the group consisting of R^0 , $1/R^8$ and $1/R^3$;

a third unit having gearsets sized to have a common ratio of R^8 , R^0 and $1/R$; and

a fourth unit having gearsets sized to have a common ratio of R^0 and $1/R$, and a reverse pinion coupled to a power source to produce 24 reverse torques.

25. (CANCELLED)

26. (CURRENTLY AMENDED) A gearbox ~~as in claim 14 wherein~~ comprising:
a plurality of gears forming gearsets, each gearset including at least one shaft extending from the gearset, wherein the gearsets are sized having ratios varying by degrees of separation of a common ratio in a geometric sequence wherein R is a common ratio in a geometric sequence, the gearbox further comprising:

a frame ~~member members~~ comprising 4 units of gearsets forming 5 shafts, including a first input shaft and a second split input shaft such that the gearbox produces an additional 12 forward torques; and

a first unit having gearsets sized to have a common ratio of R^0 ;

a second unit having 2 gearsets sized to have a common ratio of $1/R^{12}$;

a third set of gearsets sized to have a common ratio selected from the group consisting of $1/R^4$ and $1/R^3$; and

a fourth unit having gearsets sized to have a common ratio of $1/R$, and a reverse pinion coupled to a power source to produce 24 reverse speeds.

27. (CURRENTLY AMENDED) A method of gearbox design comprising:

selecting a number of torques for the gearbox;

determining a number of gearset units based upon a multiplier number representative of the number of torques selected;

providing a number of gearsets in each gearset unit based upon the number of torques selected;

determining a number of shafts equal to the number of gearset units plus one;

determining a degree of separation of a common ratio in a geometric sequence for each for each gearset unit by dividing the number of torques selected by the number of gearsets in a first gearset unit, and then dividing a remainder of the degree of separation of the common ratio by the number of gearsets in a second gearset unit; and

repeating a division step for remaining units until the degree of separation of the common ratio equals one.